

SOME NEW APPROACHES TO “REWARD” CONTRACTING

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This article looks at some new ideas on “Reward” contracts, and how some older ones might be modified to improve their usability. Specifically, it deals with three different contract vehicles for rewarding a contractor’s performance enhancement, cost savings, or schedule savings that exceed the minimum requirements specified by the government. The purpose behind reward contracting is to offer an inducement to the contractors to go beyond business-as-usual development programs, and attempt to produce innovative processes or products that subsequently benefit the government. This is in keeping with some suggestions made by former Under Secretary of Defense for Acquisition and Technology Dr. Paul Kaminski and Colleen Preston, former Deputy Under Secretary of Defense for Acquisition Reform, concerning incentivizing change away from the one-size-fits-all mode of contracting, and providing more information to the source selection authority for cost tradeoffs. I discuss three types of reward contracts (i.e., incentive, award fee, and research tournaments), and suggest what might be done to improve them. An approach to provide more contract vehicles for consideration in the contracting process, called “research tournaments,” seems to have merit.

In January of 1995, Dr. Paul Kaminski, then Under Secretary of Defense for Acquisition and Technology, discussed his concept of the challenges to be faced with decreasing defense budgets, and the need to reduce the cost of weapon system procurements at the Industrial College of the Armed Forces. He emphasized the need to adopt a more balanced approach to the cost-performance relationships in our procurements, stressing the

need to do up-front tradeoffs, and assessments of the incremental cost requirements. He stated that the results of these analyses should be made available to the decision makers early in the source selection process, so they could take them into consideration. He also mentioned the need to incentivize change away from the one-size-fits-all mode that we have followed in the past. Colleen Preston (1995), former Deputy Under Secretary of Defense for

Acquisition Reform, also stressed these points in her testimony before the House Government Reform and Oversight Committee.

Here I'll discuss some of the new ideas on competition, and how some older ones might be modified to improve their usefulness. Specifically, I'll explain three contract vehicles for rewarding a contractor's performance enhancement, cost savings, or schedule savings that exceed the minimum requirements specified by the government. This is in keeping with the new Department of Defense (DoD) Directive 5000.2-R (1996), which stresses cost management incentives.

The purpose behind "reward" contracting is to offer an inducement to contractors to go beyond business-as-usual development programs, and attempt to produce innovative processes or products that subsequently benefit the government (Rogerson, 1989). This is based upon the premise that if the reward to the manufacturer is low, quality manufacturers will not be interested in doing business with the government. For instance, if profits are limited to 10 percent of the contract award, only contractors who normally make less or equal to that in the private sector will be willing to bid on the contract; contractors who normally make more will not be willing to bid and subsequently lose money by accepting those contracts (Lucas, 1996). Confirmation of this trend is shown by the recent sale by several con-

tractors of their government divisions, so they can focus on the more lucrative commercial market (Beltramo, 1996). In support of the reward premise, recent industry comments have suggested that the government share some of its savings with industry, when industry has made an investment that produced savings for the government (*National Defense*, 1996).

HISTORY OF "REWARD" CONTRACTING

INCENTIVE CONTRACTING

Under this type of contract, the incentive payment varies based upon the contractor's ability to satisfy specific formula-driven cost or performance objectives. A precise definition of the factors that will be used to determine the incentive fee to be paid is negotiated in advance, and allows some of the profit loss or gain to be shared between the government and the contractor, based on the contractor's ability to reach the target goal. The objective of an incentive contract is to motivate the contractor to earn more compensation by achieving better performance and by controlling costs.

Problems with incentive contracting.

These contracts have not been found to be especially effective in reducing costs, nor speeding up schedule, but they do generally meet performance goals, according to DeMong (1984), who reviewed several previous studies (Belden, 1969; DeMong,

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1978; Hunt, 1971; Hunt, Rubin and Perry, 1971; Jameson, 1979; and Williams and Carr, 1981). The GAO (1987) performed a review of 62 DoD incentive contracts to determine if this type of contracting met the theory concepts it was supposed to follow. Their findings were consistent with the theory that the final costs for the programs would fall around the target price set at contract award (the majority of the contracts fell within 5 percent of the target), with 47 percent of the contracts falling under the target and 53 percent falling over the target price. However, 21 percent of the contracts exceeded the ceiling price where the government liability ended. They also found that there was no relationship between the cost-sharing ratio and the achievement of a contract's target price, which runs against the theory that as a contractor's share ratio increases, the contractor has a greater incentive to meet or underrun the target costs.

AWARD FEE CONTRACTING

In this type of contract, the government assigns priority to what kinds of things it considers important and will pay an award fee for. These types of contracts have been in use since 1962, when the National Aeronautics and Space Administration and the Navy began to use them. Its purpose is to encourage the contractor to surpass the minimum acceptable level of performance established in the contract, for areas ranging from cost to schedule to performance. This type of contract varies from the incentive contract, in that the award is subjective and based upon after-the-fact evaluations to determine the amount of the award. Award fee contracts have gener-

ally been found effective in improving contractor performance, according to Beeckler and Correia (1982), and DeMong (1984), who reviewed a number of previous studies (Brown, 1976; Buck, 1974; Byers, 1973; Carter, 1977; DeJong, 1978; Egan, 1968; Hunt, 1982; Knepshield, 1976; Larsen, 1978; and Williams and Carr, 1981).

Several authors attribute the success of this type of contract over incentive contracts to the involvement and periodic

performance evaluations performed on the contracts (Jameson, 1979; Keathley, 1994). Originally, this type of contract was limited to cost plus contracts, but Francom (1989) recommended that they should be expanded to include fixed price contracts, which they currently have been.

Problems with award fee contracting.

This type of contract requires significant technical and managerial oversight to continually monitor and communicate with the contractor about their work effort, since the awards are made as often as the government wants throughout the contract's life (DeMong, 1984; Hogenmiller, 1992; Schade, 1990). A problem may also exist with the determination of the contractor's performance, because of the subjective nature of the decision process that determines the amount of the award fee (GAO Study, 1991; Isbell, 1992). This GAO review of the Department of Energy Award Contracts (1991) recommended improvement in three areas. The first was to develop specific, mea-

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surable performance objectives to supplant what had been used previously. Second was to develop procedures that appropriately reflected the results of the on-site reviews in the performance evaluations, and that tracked the contractor's responses to previously identified deficiencies. Finally, they recommended new procedures and training to implement these

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recommendations. In summary, the GAO report stated that to achieve these new procedures, more time would have to be spent on day-to-day operations and procedures, which would possibly require more staff to re-

view the processes. Isbell (1992) also discussed some NASA recommendations, whereby these contracts should have a negative or zero fee, if the contractor's performance were not up to expectations.

Suggestions. One way to address this problem would be for the contractor to specify in his proposal what he would consider to be appropriate rewards for specific goals (Fullerton, 1995a). This would allow the source selection committee to perform the up-front tradeoffs and assessments of the incremental cost requirements that Kaminski (1995) has suggested. It would also reduce the arbitrary nature of what constitutes an improvement, and make the award equal to what the contractor feels it should be worth.

This simple process would eliminate most of the problems associated with award fee contracts, and also save time and effort on the part of the government.

RESEARCH TOURNAMENTS

Recently, Fullerton (1995a and 1995b), Fullerton and McAfee (1996), and Taylor (1995) have expressed some novel and interesting proposals concerning competition. In these "research tournaments," the competition procedure is structured as an auction and prototype competition, with the winner awarded a "prize" for the best product. The auction component consists of the participants paying a fee for entering the tournament, which could be used to defray the cost of the prize, or offset the cost of conducting the competition.

The government would commit to pay the research tournament winner a prize that would be verifiable by the courts (i.e., a prize that must be awarded). The selection of the winner would be based upon specified priorities (e.g., performance or cost) established by the government, which would be specified in the request for proposal, so that the competing firms would know which innovations or priorities were most important in winning the prize. Finally, each firm would submit its prototype at the end of a specified period of time, for the government to evaluate and subsequently award the prize for the best product. Thus, the competition would differ from a patent competition, in that it would select the most innovative design across a group of offerors that would win, with the quality of the design stressed over the date of discovery.

This process should promote innovation on the part of the offerors, and pro-

vide firmer cost estimates for equipment, since costs would be based upon completed hardware versus conceptual hardware estimates. Rich and Janos (1994) also point out "the beauty of a prototype is that it can be evaluated, and its uses clarified, before costly investments for large numbers are made." This is also in keeping with DoD Directive 5000.1 (1996), which stresses modeling and simulation of new systems. An additional benefit of this type of procurement is that it should require less government oversight, since the offeror has already developed the item, and is offering it at a fixed price to the government. Thus, concern about overseeing development and production costs is negated. Finally, as mentioned above, the contractors could specify along with their proposals what they consider to be appropriate rewards or fees for additional or alternative performance goals. This would allow the source selection authority to perform up-front tradeoffs and assessments.

This type of contract would seem most suited for procurements that have either spin-on or spin-off possibilities, and where there are opportunities for commercial application of the developed product. This would prompt the developer to risk capital investments in the hope of significant commercial gains. The concept behind this type of procurement is not new. The first instance of its use was seen in the development of the steam locomotive in England in 1829 (Day, 1971), where £500 was awarded for the "fastest" steam locomotive that met the railroad's requirements. In this contest, five offerors entered, but three of the locomotives did not meet the requirements stated by the railroad, so competitive races were run be-

tween the remaining two locomotives, the "Rocket" and the "Novelty." The Rocket was the eventual winner, with the Novelty breaking down on one of the competitive trial runs. This example demonstrates one of the advantages of a prototype competition, in that the demos can be tested in a face-off, which would reveal design problems that may not be obvious in a review of design drawings. More recently, the selection of the high-definition TV standards (*The Economist*, 1993), and the Air Force's Advanced Tactical Fighter (Easterbrook, 1991; Opall, 1991) were based upon prototype competitions. Opall (1991) points out that while the contractors

were not happy with investing so much money up-front on a program, they do expect to re-

cover their investments with a profit on the system within 10 years, and considered that the technologies they developed as part of their effort would give them a leg up on future contracts.

One of the difficulties of a prize process is determining what the amount of the prize should be. One approach would be to set the award to a level commensurate with what the government felt the work effort to be worth; but, as with the award fee, would have problems with its arbitrary nature. Another approach has been suggested by Rogerson (1989), which would involve basing the prize on a formula that uses the price of a company's stock. In that way, the prize could vary from one company to another, but it would still have the same magni-

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tude of importance to the offeror. This approach would allow for computing the prize in advance, so the source selection authority could use that information in its determination.

Fullerton (1995a) has suggested that the contractor specify in his proposal what he would consider to be an appropriate reward for his efforts, and that amount, like Rogerson's, could be taken into consideration in the source selection. Or, if the contract award was large enough, or had commercial applications, the award could constitute just the winning of the contract, since the follow-on work would generate sufficient commercial incentives for the company. With these various alternative approaches to determine the nature of the award, it would depend upon the type of procurement as to which method would be more appropriate.

SUMMARY

In keeping with Dr. Kaminski's recommendations concerning incentivizing change away from the one-size-fits-all mode of contracting, these contract vehicles—incentive contracting, award fee contracting, and research tournaments—should be viewed as approaches that can be used to bring benefits to the modernization of government equipment. The specific type of reward contract to use to achieve these benefits would seem to be dependent upon the type of benefit desired, the amount of government oversight available, and the amount of risk placed upon the contractor.

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